"The Well-Being Gap Between the Married and the Never Married: Time Trends and Macro Processes"

Mikucka, Malgorzata

Abstract

This investigation examined if the life satisfaction advantage of married persons over the non married decreased over the last three decades, and if the trend was explained by changes of economic specialization within marriage. The author used nationally representative data fromWord Values Survey – European Values Study integrated data set for 87 countries (n = 138,573 men and n = 153,952 women), covering a period of 29 years. Overall, the life satisfaction gap related to marriage decreased over time. However, the results did not support the hypothesis that economic specialization shaped the observed trend. This evidence questions one of assumptions of the economic model of household and suggests that the gains to marriage are higher in conditions of freedom of choice rather than in conditions of economic necessity

Document type : *Communication à un colloque (Conference Paper)*

Marriage and life satisfaction. Did the relationship weakened over the last three decades and was the trend shaped by economic specialization?

Małgorzata Mikucka
Université catholique Louvain (Belgium)

Paper presented at XVIII ISA World Congress of Sociology,
Yokohama 13-19 July 2014.

July 2, 2014

Abstract

This investigation examined if the life satisfaction advantage of married persons over the non married decreased over the last three decades, and if the trend was explained by changes of economic specialization within marriage. The author used nationally representative data from Word Values Survey – European Values Study integrated data set for 87 countries (n = 138,573 men and n = 153,952 women), covering a period of 29 years. Overall, the life satisfaction gap related to marriage decreased over time. However, the results did not support the hypothesis that economic specialization shaped the observed trend. This evidence questions one of assumptions of the economic model of household and suggests that the gains to marriage are higher in conditions of freedom of choice rather than in conditions of economic necessity. (128 words)

KEY WORDS:
comparative analysis; economic specialization; life satisfaction; marriage; subjective well-being; time trend;

1 INTRODUCTION

In October 2006 the New York Times reported that for the first time in history married couples became a minority among other types of US households. Growing divorce and cohabitation rates, and falling marriage and fertility rates are other indicators of "retreat from marriage" (see, e.g., Adams, 2004; Cherlin, 2004; Huston and Melz, 2004; Popenoe, 1993). This suggests that for married couples the contemporary societies became less advantageous than they were in the past.

There are many possible ways to evaluate the advantage of marriage over other living arrangements. One possible way is to examine if and to what extent married people are more satisfied with their lives than the non-married. Indeed, large literature showed that the effect of marriage on happiness and life satisfaction was positive (see, e.g., Mastekaasa, 1994; Stack and Eshleman, 1998; Verbakel, 2012). If social conditions for marriage worsened over time, the marriage-related life satisfaction gap likely decreased over time. The literature addressing this question focused mainly on the case of the US (Amato et al., 2003; Corra et al., 2009; Glenn, 1991; Glenn and Weaver, 1988; Rogers and Amato, 2000; Waite, 2000), and showed that the marriage-related life satisfaction gap either decreased or remained stable. Evidence of how did this gap change in other countries or regions of the world is missing. This paper fills this gap by investigating data from 87 countries for a period of up to 29 years.

If the trend of marriage-related life satisfaction gap is indeed negative, it likely reflects a major societal change. This paper focuses on one plausible cause: changes of economic specialization within marriage. The economic model of household (Becker, 1981) implies that economic specialization builds the advantage of married individuals over the non-married. Although household economics expressed this advantage in terms of overall household's productivity and the utility derived from it, the interpretation in terms of life satisfaction directly follows. Existing evidence showed that married couples who specialized experienced higher life satisfaction increase related to marriage than couples who do not specialize (Stutzer and Frey, 2006). The comparative cross-country evidence on the relationship between specialization and gains to marriage is scarce. This research contributes to the literature by investigating if countries where specialization is less common, or where it decreased, create a less supportive context for marriages as compared to other living arrangements.

The question if contemporary societies create worsening conditions for marriage, and if the decline of economic specialization is the driver of these changes policy-relevant. First, the institution of marriage is typically under the protection of state and receives various privileges, which rests on the assumption that marriage is a desirable institution. This investigation provides comprehensive evidence on the variation across countries and over time of one of the possible desirable outcomes: life satisfaction of married persons. Second, some policies attempt to strengthen the institution of marriage by providing married couples with incentives for gender-traditional, specialized division of work. This may occur, for example, through a tax system discouraging the lower earning spouse from full-time employment, or through provision of long childcare leaves for women. This contribution adds to the discussion on the potential effects of such policies by providing evidence on the relationship between the average level of specialization within marriage and the size of marriage-related life satisfaction gap. By accounting for a set of control macro factors, this investigation allows understanding which macro factors may increase life satisfaction of married couples, thus providing policy-relevant knowledge to shape favorable conditions for marriages.

1.1 Life satisfaction gap related to marriage

Married people are on average happier and more satisfied with their lives than the unmarried, and this pattern holds across countries (see, e.g., Mastekaasa, 1994; Stack and Eshleman, 1998; Verbakel, 2012). The gains to marriage are not limited to subjective well-being. Gove et al. (1990) listed other aspects in which married persons were better off than the unmarried, including: lower frequency of mental illness, better physical health, and lower risk of institutionalization (e.g., imprisonment). Fixed-effects analyses of panel data suggested that the relationship is at least partly causal: marriage indeed makes people happier (Evans and Kelley, 2004; Soons et al., 2009; Stutzer and Frey, 2006), even though the initially high life satisfaction gains subsequently decrease due to adaptation (Lucas, 2007; Lucas and Clark, 2006; Soons et al., 2009; Zimmermann and Easterlin, 2006).

One of the explanations of this positive effect of marriage on well-being is that social integration and support are higher in married couples (Zimmermann and Easterlin, 2006). Indeed, marriage – in contrast to parenting and other types of co-residence – is associated with lower levels of loneliness (Stack, 1998). Moreover, only good marriages have positive consequences for life satisfaction, whereas

an unsatisfying marriage can be a source of unhappiness (Gove et al., 1983, 1990; Huston and Melz, 2004; Proulx et al., 2007). Marriage increases life satisfaction also indirectly, because married persons earn on average higher incomes, are at lower risk of poverty, and suffer from less health problems (Waite, 2000).

The marriage-related life satisfaction gap is partly shaped by selection. Stutzer and Frey (2006) showed that people who eventually marry were happier already before the marriage. This result has not been confirmed by Zimmermann and Easterlin (2006), but both studies (Stutzer and Frey, 2006; Zimmermann and Easterlin, 2006) provided evidence of negative selection: the persons who eventually divorced were initially (i.e., before marriage) less happy. Thus, studies of marriage-related life satisfaction gap should control for selection effects.

1.2 Trends of marriage-related life satisfaction gap

Part of the literature focused directly on question how did the happiness of married couples change over decades. Some of the analyses documented a constant trend for US data. For instance, Waite (2000), looking at period 1972-1996 found no significant shift in the marriage-related happiness gap. Similarly, Corra et al. (2009) found no consistent trend of satisfaction with marriage during the years 1973-2006 across the groups of White husbands, White wives, Black husbands and Black wives.

In contrast to that, another part of literature showed evidence of decreasing gains to marriage in the US. Amato et al. (2003) investigated the change of indicators of marital quality for the US over the period 1980-2000. Whereas the marital quality and divorce proneness changed little, marital interaction declined, suggesting that some of the large-scale social changes made marriage a more difficult arrangement. Similarly, Glenn (1991) found that the percentage of people reporting that their marriages were very happy declined over the period 1973-1988; Glenn and Weaver (1988) showed a decline of the relationship between marital status and declared happiness over the period 1972-1986, mainly due to the negative trend of life satisfaction among married women and a positive trend among never married men. Rogers and Amato (2000) provided evidence that the cohort married between 1981 and 1997 reported less interaction and more marital conflict than the cohort married between 1964 and 1980.

1.3 Heterogeneity of marriage-related life satisfaction gap

There is evidence that life satisfaction gains to marriage vary across individuals. Among others, Stutzer and Frey (2006), Mancini et al. (2011) and Kamp Dush et al. (2008) showed that trajectories of life satisfaction associated with marriage are heterogeneous across individuals and social groups. It is also plausible that the marriage-related life satisfaction gap differs across countries and social contexts. Literature observed this cross-country variation almost exclusively through the life satisfaction gap between married and cohabiting couples. Several papers examined the effects of a range of cultural factors: religiosity (Schultz Lee and Ono, 2012), collectivism-individualism scale (Diener et al., 2000), perceived importance of marriage in society (Vanassche et al., 2012), familism (Verbakel, 2012), acceptance of alternative family arrangements (Soons and Kalmijn, 2009), societal gender role norms (Schultz Lee and Ono, 2012; Stavrova et al., 2012), and the strength of welfare state (Ryan et al., 1998). However, there is not much evidence on the cross-country variation of the life satisfaction gap between married and non-married persons.

1.4 Specialization

According to Becker's economic model of household (Becker, 1981), life satisfaction gains to marriage should be higher in couples with a higher level of specialization. Specialization is defined as a situation when spouses perform different productive activities, depending on their relative productivities (with market productivities measured by relative wage rates of spouses). Specifically, one spouse (typically the man) is fully involved in market work, and the other spouse (typically the woman) is either fully involved in household work, or shares the time between household and market work. Although Becker's model of household refers to economic (productivity) gains from specialization, gains in terms of life satisfaction may be inferred from the economic gains. Notably, among various types of unions, specialization should characterize stable relationships such as marriage, because expectation that the union will continue lowers the risk for the spouse specializing in household tasks. Although growing divorce rates suggest that the stability of marriages declines, they remain relatively stable, in particular compared to cohabitation.

Although the model of specialization has been questioned, it remains one of the widely accepted models of marriage, and its predictions have been tested empirically. In particular, the review by Oppenheimer (1997) examined the "independence hypothesis" which stets that the "decline of marriage" was caused by growing employment and economic independence of women. Oppenheimer refuted much of the time-series evidence, and listed individual-level evidence of the positive relationship between women's employment and the propensity to marry. In a similar vein, Rogers and DeBoer (2001) have shown that higher income of women may have positive consequences for marital satisfaction. Other analyses supported the specialization model. For instance, Stutzer and Frey (2006) showed with individual panel data that the potential, as well as actual, specialization of couples contributed to the higher life satisfaction increase in the perriod surrounding marriage, in particular of women. Consistently with these results, Amato et al. (2003) showed that the growth of women's employment, especially the extended work hours, increased work-family conflict with negative spillover effects on intra-family conflicts, which was only partially offset by the positive consequences of the increase in families' incomes.

1.5 The present research

The goal of the research presented here is to provide evidence on the time trend of marriage-related life satisfaction gap, using data broad in terms of number of countries and observation period. Previous empirical studies (Glenn, 1991; Glenn and Weaver, 1988; Rogers and Amato, 2000) suggested that the average gains to marriage declined over time; the same may be inferred from the decreasing marriage rates, and increasing frequency of cohabitation and divorce. Past studies investigating this question concerned mainly the US, and heavily relied on the General Social Survey data. The evidence on the trend of marriage-related life satisfaction gap in other countries and regions is missing. This investigation attempts to fill this gap by estimating the time trend of marriage-related life satisfaction gap for 87 countries on various levels of development, covering a period of up to 29 years.

Further, this research investigates the effect of social context on the marriage-related life satisfaction gap, which is currently understudied. In particular, I verify the hypothesis that marriage-related life-satisfaction gap is lower in countries and periods where: (a) the economic specialization of spouses is weaker, and (b) where the economic specialization of spouses has been decreasing over time.

Conceptually, and empirically, the effect of contextual specialization should be distinguished from the effect of specialization of a particular couple. Becker's model concerns specialization in particular couples. However, contextual specialization may be also a relevant factor, because it may serve as a proxy of how likely and how easy it is for couples in a given country to assume traditional gender roles rather than gender egalitarian ones. In other words, it may be seen as a compound measure of expectations and social pressures on the one hand, and institutional and policy-related incentives on the other.

Another distinction that this hypothesis makes is the one between the effects of the cross-country differences, and the effects of changes that take place over time. This is discussed in more detail in the Method section.

2 METHOD

2.1 Data

I use data from the full integrated data set of the World Values Survey and the European Values Study (WVS-EVS), covering the period 1981-2009 (EVS, 2011; WVS, 2009). In the course of both WVS and EVS research programmes, individual country research agencies and institutions collected data on representative samples of adult populations (aged 18 or older). The questionnaires were uniformly structured and the translation into national languages from the English questionnaire was closely monitored. The modes of data collection included face-to-face and phone interviews in case of WVS, face-to-face interviews (either CAPI or PAPI) in case of EVS, and an internet panel (Finland in EVS).

The integrated data set contains information for 102 countries and regions and over 420,000 respondents. This is an advantage for current study, as the data document the relevant variables for an exceptionally broad range of countries, thus allowing for a satisfactory variation of country-level variables. These data are also good material for studying time trends, as they cover the time span of 29 years. Currently it is one of the few data sets with such a broad coverage.

The sample used in the analysis consists of 138,573 men and 153,952 women, overall more than 290,000 individuals (i.e. 68% of the total number of individuals in the WVS-EVS data set). The overall high percentage of missing data results mainly from inconsistencies among questionnaires in particular countries and waves (see Appendix 1), which assures low risk of systematic bias of the estimates due to missing data.

2.2 Statistical method

I use multilevel regression which models the individual-level dependent variable as a function of both individual and country characteristics. I use multilevel, rather than ordinary OLS regression, because hierarchical data (such as the multi-country WVS-EVS with individuals nested within country-waves nested within countries) do not satisfy the basic assumption of independence of observations. This may lead to biased estimates of parameters and their standard errors, which in turn can result in wrongly rejecting or supporting theoretically important conclusions (Bryk and Raudenbush, 1992; Luke, 2004). Multilevel models properly account for the hierarchical structure of the data; they also simultaneously estimate the variation within and between countries and country-waves, and attribute the variation unexplained by the model to the specific levels of data.

Random effect multilevel models (as the one used in this analysis) assume that the random effects are not correlated with the explanatory variables; if this assumption is not met, the results are non consistent. Therefore I validated the analysis by estimating models with fixed intercepts (dummy variables) for countries and country-waves (Snijders, 2005a). As the fixed-effects models gave the same results as the random-effects models, I present the results of the random effects model, as it is considered a more efficient one.

I estimate a three-level model with individuals i nested within country-waves j, nested within countries c. The number of waves observed per country varies between 1 and 8 (in case of Spain). Overall, I observe 211 country-waves, with the average of 2.4 waves per country. This small average cluster size at level 3 is not an obstacle for estimating the effect at this level, as the total sample size at this level is of prime importance (Snijders, 2005b).

My dependent variable is life satisfaction; in interpreting the results I focus on the size of life satisfaction gap between married and non-married persons. This strategy has an advantage over directly inspecting the determinants of life satisfaction of married persons because it allows distinguishing between the general determinants of life satisfaction and the specific determinants of life satisfaction of married people. Across social contexts, the average life satisfaction of the married and of general population are strongly correlated ($\rho = .99$ for the 211 country-waves).

Marriage may have different life satisfaction consequences for men and for women, therefore I estimated the models separately for each gender. Formally, the model is described by Equations 1-3.

$$\begin{aligned} \mathrm{LS}_{ijc} = {} & \alpha_{0jc} + \beta_1 \mathrm{Married}_{ijc} + \mathbf{B_K X}_{ijc} + \beta_2 \mathrm{Year}_{jc} + \beta_3 \mathrm{Year}_{jc}\mathrm{Married}_{ijc} + \\ & + \beta_4 \Delta\mathrm{Specialization}_{jc} + \beta_5 \Delta\mathrm{Specialization}_{jc}\mathrm{Married}_{ijc} + \\ & + \beta_6 \mu\mathrm{Specialization}_{c} + \beta_7 \mu\mathrm{Specialization}_{c}\mathrm{Married}_{ijc} + \\ & + \mathbf{B_L \Delta Y}_{jc} + \mathbf{B_M \Delta Y}_{jc}\mathrm{Married}_{ijc} + \mathbf{B_N} \boldsymbol{\mu Z}_{c} + \mathbf{B_P} \boldsymbol{\mu Z}_{c}\mathrm{Married}_{ijc} + \epsilon_{ijc} \end{aligned} \tag{1}$$

$$\alpha_{0jc} = \gamma_{00c} + \tau_{jc} \tag{2}$$

$$\gamma_{00c} = \gamma_{000} + \nu_{c} \tag{3}$$

In this model, individual life satisfaction is regressed on a set of individual, country-wave, and country level predictors. In Equation 1, coefficient β_3 informs about the overall trend of the marriage-related life satisfaction gap, and the changes of this coefficient associated with including additional control variables inform if these variables explain the trend of the life satisfaction gap. Coefficients β_5 and β_7 inform how the happiness gap between the married and the never married changes with the level of specialization: β_5 informs about the effects of the within-country changes of specialization over time, and β_7 – about the consequences of the cross-country differences in the level of specialization. $\mathbf{X}_{ijc}$ is a vector of individual level control variables, $\mathbf{\Delta Y}_{jc}$ is vector of country-wave level control variables, and $\boldsymbol{\mu Z}_{c}$ is a vector of country level control variables, whereas $\mathbf{B_K} - \mathbf{B_P}$ are the vectors of respective β coefficients.

In the model (see Equations 2 and 3), the only coefficients allowed to vary randomly are the random intercepts τ_{jc} and ν_c. In other words, the average life satisfaction is allowed to vary randomly across country-waves and across countries (random intercept model).

Country level variables ($\mu\text{Specialization}_c$ and the vector $\mu\mathbf{Z}_c$) are defined as country-specific averages over the observation period (the values are subsequently centred around the grand mean for easier interpretation of coefficients). Country-wave level variables ($\Delta\text{Specialization}_{jc}$ and the vector $\mathbf{\Delta Y}_{jc}$) represent changes within countries over time and are defined as deviations from the country-specific mean (μ).

The coefficients estimated separately for deviations (Δ) and means (μ) may be interpreted analogously to within-individual and between-individual effects in regression models for panel data: the coefficients estimated for Δ variables inform what differences of life satisfaction are associated with within-country changes of macro factors, and the coefficients estimated for μ variables inform what differences of life satisfaction are associated with the cross-country variation of the macro factors. The distinction between changes over time and cross-country differences is relevant for translating the results into policy recommendations. The effects of changes over time control for the unobserved time-invariant differences between countries. On the other hand, interpretation of the effects of the cross-country differences in terms of the potential effects of policies is more limited, as they capture also the unobserved time-invariant differences between countries, which may be large in case of countries at different levels of development or with different cultural backgrounds.

2.3 Measurement of individual level variables

Life satisfaction The question *"All things considered, how satisfied are you with your life as a whole these days? Please use this card to help with your answer"* collects the answers on a 10-point scale, from 1 – *dissatisfied* to 10 – *satisfied*. The variable has a normal distribution, with the grand mean of 6.7. Country-year specific means vary between 3.72 (Moldova in 1996) and 8.5 (Puerto Rico in 2001).

Legal marital status Marital status is measured with as a set of dummy variables, including: (a) married (59% of the final sample), (b) living together as married ($\approx$ 5%), (c) divorced ($\approx$ 4%), (d) separated (1.6%), (e) widowed ($\approx$ 7%), and (f) never married (second largest category, 23% of the final sample).

Individual level control variables I control for a range of variables that may correlate with both life satisfaction and being married. These include: gender, being unemployed (self-declared), being a housewife/househusband (self-declared), education (secondary and tertiary education levels are coded as dummy variables), age (linear and square components, centred at 40), family income (measured on a 10-points scale, centred on the country-wave specific median, missing values replaced with median and flagged; for wave 2008 of the EVS a 12-point scale was recoded into a 10-point scale and used as in other waves), having children (dummy taking the value 1 for parents, for wave 2008 of the EVS the information on children living in the household was used), and health problems (measured on a 5-point scale, centred on the overall mean). (In some waves and countries, education has been measured not as educational level, but as the age of finishing education. In order to include these countries and waves in the analysis I have approximated the educational level based on the information on the age of finishing education: I recoded the age 23-35 years into tertiary and age 18.5-23 years into secondary education.)

I also included the interactions of being married with family income, children, tertiary education, and own unemployment.

Percent of married in age-gender-educational groups To control for the effects of selection I include the percentage of married persons in groups distinguished on the basis of age, gender, and education (tertiary education vs. lower). Selection to marriage is captured by the interaction of this variable (and its quadratic term) with being married, which informs how does the marriage-related life satisfaction gap changes with the probability of being married of a person who shares with the respondent the basic socio-demographic characteristics.

2.4 Measurement of country-wave and country level variables

Economic specialization of spouses is approximated with the percentage of home-makers (i.e. women declaring that taking care of home and children is their main activity) among married women aged

18-60. This variable takes values between .004 (Sweden in 2009) and .9 (Pakistan in 1997; overall $\mu = .35, sd = .23$). The transition countries stand out with on average low levels of specialization ($\mu = .16, sd = .1$), the developing countries are characterized by high variation of specialization levels ($\mu = .5, sd = .23$), and the developed countries stay somewhat in between ($\mu = .33, sd = .18$.)

Country and country-wave level control variables In order to isolate the effect of specialization I control for a range of macro-factors which likely correlate with the level of specialization and which may affect the life satisfaction of married couples: GDP, fertility rate, political and social rights of women, and the divorce ratio.

The real GDP per capita (retrieved from: Heston et al., 2012) is expressed in international dollars of the year 2000 transformed in the logarithm. I also control for the year of conducting the survey (centred at the year 2000), and include a dummy. Fertility rate ("number of children that would be born to a woman if she were to live to the end of her childbearing years and bear children in accordance with current age-specific fertility rates") is taken from the United Nations (2013) database.

The variables referring to the political and social rights of women come from the Cingranelli and Richards (2008) and score between the values of 0 and 3. (0 indicates that women's rights were not guaranteed by law in a a given year and country; 1 – that women's rights were guaranteed by law but were not enforced in practice; 2 – that the rights were guaranteed by law and enforced in some areas, but women were still discriminated against in practice; 3 indicates that women's rights were guaranteed in both law and practice.) The *political rights* include: the right to vote, to run for political office, to hold elected and appointed government positions, to join political parties, and to petition government officials. The *social rights* cover: the right to equal inheritance; to enter into marriage on a basis of equality with men; to travel abroad; to obtain a passport; to confer citizenship to children or a husband; to initiate a divorce; to own, acquire, manage, and retain property brought into marriage; to participate in social, cultural, and community activities; the right to an education; the freedom to choose a residence/domicile; and the freedom from female genital mutilation and forced sterilization.

Divorce ratio is measured as a (country-wave specific) proportion of divorced women among all women aged 18-60. I use this information rather than divorce rate (United Nations database), because the former is available only for 49 (out of 87) countries and 137 (out of 211) country-waves covered by the analysis. (The correlation between the two measures on a country-wave level is $\rho = .69$)

Both the measure of specialization and the above mentioned control variables are included in the model as the country-specific averages over the observation period (averages are marked as μ) and as the country-wave specific deviations from the country-specific mean (deviations are marked as Δ). These variables are included as main effects, as well as interacted with being married.

3 RESULTS

Tables 1 and 2 show the estimation results, for men and women separately. For each gender, I start by estimating null models, that is the basically empty models containing only the (fixed and random) intercepts (not shown). The null models inform that 15% of the variation unexplained by the model is associated with the country level, and an additional 4% – with country-wave level, which is proportion large enough to justify the use of multilevel regression. The Akaike information criterion (AIC) values of the null models ($AIC = 682,598$ for women, and $AIC = 611,542$ for men, with $df = 4$) act as benchmarks for assessing if the subsequent models, containing more explanatory variables, offer better fit to the data.

I proceed with a cumulative strategy of building models. Models 1 (in both Tables 1 and 2) contain the individual-level predictors and they estimate the overall trend of the marriage-related life satisfaction gap; Models 2 add the contextual variables, including the specialization measure, as well as its interaction with being married; Models 3 include also the interactions of the remaining contextual variables with being married (cross-level interactions).

The decrease of AIC statistics in Models 1, 2 and 3 as compared to null models informs, that each model is an improvement over the less complex models, and that Models 3 (both for men and for women) offer the best fit to the data.

In the final Model 3 the average marriage-related life satisfaction gap was about 2.5% for women and 3% for men. Cohabitation had a smaller positive effect on life satisfaction, and being widowed, divorced and separated had negative effects. Separation had the strongest negative effect on life satisfaction,

Table 1: Multilevel regression of life satisfaction on individual- and country-level predictors, men.

	(1)		(2)		(3)	
Individual-level variables:						
married	0.38	(0.000)***	0.38	(0.000)***	0.29	(0.000)***
cohabiting	0.15	(0.000)***	0.14	(0.000)***	0.15	(0.000)***
widowed	−0.18	(0.000)***	−0.18	(0.000)***	−0.17	(0.000)***
divorced	−0.17	(0.000)***	−0.17	(0.000)***	−0.15	(0.000)***
separated	−0.45	(0.000)***	−0.45	(0.000)***	−0.43	(0.000)***
other individual-level controls	yes		yes		yes	
Individual-level interactions with being married:						
married x income scale (1-10)	0.00	(0.949)	−0.00	(0.991)	0.00	(0.719)
married x housewife	−0.15	(0.379)	−0.15	(0.377)	−0.08	(0.628)
married x unemployed	−0.06	(0.103)	−0.06	(0.101)	−0.01	(0.779)
married x % married in age-sex-edu group	0.09	(0.205)	0.10	(0.201)	0.11	(0.158)
married x % married^2 in age-sex-edu group	−0.56	(0.003)**	−0.56	(0.003)**	−0.42	(0.029)*
Country-year variables:						
year (10yrs)	0.14	(0.003)**	−0.25	(0.009)**	−0.25	(0.012)*
Δ specialization			0.21	(0.661)	−0.09	(0.859)
Δ political rights of women			0.04	(0.719)	−0.01	(0.910)
Δ social rights of women			0.06	(0.573)	0.10	(0.331)
Δ divorce ratio			6.41	(0.002)**	6.10	(0.005)**
Δ GDP, ln			1.20	(0.000)***	1.01	(0.000)***
Δ fertility rate			0.03	(0.875)	−0.00	(0.980)
Country-year interactions with being married:						
married x year (10yrs)	−0.09	(0.000)***	−0.10	(0.000)***	−0.11	(0.000)***
married x Δ specialization			−0.09	(0.603)	0.31	(0.107)
married x Δ political rights of women					0.09	(0.028)*
married x Δ social rights of women					−0.05	(0.149)
married x Δ divorce ratio					0.58	(0.463)
married x Δ GDP, ln					0.28	(0.001)***
married x Δ fertility rate					0.06	(0.401)
Country variables:						
μ specialization			−0.69	(0.050)*	−0.59	(0.098)
μ political rights of women			−0.07	(0.689)	−0.07	(0.720)
μ social rights of women			0.42	(0.000)***	0.47	(0.000)***
μ divorce ratio			−4.24	(0.038)*	−4.05	(0.051)
μ GDP, ln			0.38	(0.000)***	0.29	(0.000)***
μ fertility rate			−0.05	(0.489)	−0.03	(0.706)
developing countries			0.88	(0.000)***	0.77	(0.000)***
Country interactions with being married:						
married x μ specialization			0.06	(0.243)	−0.06	(0.451)
married x μ political rights of women					−0.01	(0.783)
married x μ social rights of women					−0.06	(0.020)*
married x μ divorce ratio					−0.18	(0.699)
married x μ GDP, ln					0.13	(0.000)***
married x μ fertility rate					−0.05	(0.003)**
married x developing countries					0.19	(0.000)***
Varying coefficients:						
Country var(_cons)	0.72		0.14		0.14	
Country-year var(_cons)	0.23		0.21		0.21	
var(Residual)	4.28		4.28		4.27	
rho statistics, country	0.14		0.03		0.03	
rho statistics, country-year	0.04		0.05		0.05	
Summary statistics:						
AIC	595,734		595,637		595,473	
Log-likelihood	−297,839		−297,776		−297,682	
Model's df	24		39		50	
Observations	138,573		138,573		138,573	

* $p < .05$, ** $p < .01$, *** $p < .001$ (exact p-values in parentheses)
Source: WVS-EVS integrated data file 1981-2009

Table 2: Multilevel regression of life satisfaction on individual- and country-level predictors, women.

	(1)		(2)		(3)	
Individual-level variables:						
married	0.30	(0.000)***	0.30	(0.000)***	0.25	(0.000)***
cohabiting	0.13	(0.000)***	0.13	(0.000)***	0.13	(0.000)***
widowed	−0.06	(0.023)*	−0.06	(0.023)*	−0.05	(0.052)
divorced	−0.17	(0.000)***	−0.17	(0.000)***	−0.16	(0.000)***
separated	−0.27	(0.000)***	−0.27	(0.000)***	−0.26	(0.000)***
other individual-level controls	yes		yes		yes	
Individual-level interactions with being married:						
married x income scale (1-10)	0.03	(0.000)***	0.03	(0.000)***	0.03	(0.000)***
married x housewife	0.07	(0.013)*	0.08	(0.015)*	0.09	(0.008)**
married x unemployed	0.19	(0.000)***	0.19	(0.000)***	0.21	(0.000)***
married x % married in age-sex-edu group	0.12	(0.071)	0.12	(0.069)	0.11	(0.106)
married x % married^2 in age-sex-edu group	0.07	(0.722)	0.07	(0.704)	0.07	(0.699)
Country-year variables:						
year (10yrs)	0.08	(0.109)	−0.33	(0.000)***	−0.30	(0.001)**
Δ specialization			0.34	(0.466)	0.21	(0.655)
Δ political rights of women			0.04	(0.745)	0.04	(0.704)
Δ social rights of women			0.15	(0.128)	0.18	(0.070)
Δ divorce ratio			6.77	(0.001)***	5.09	(0.013)*
Δ GDP, ln			1.21	(0.000)***	1.11	(0.000)***
Δ fertility rate			0.09	(0.613)	0.10	(0.575)
Country-year interactions with being married:						
married x year (10yrs)	−0.01	(0.327)	−0.01	(0.481)	−0.07	(0.015)*
married x Δ specialization			0.02	(0.895)	0.17	(0.353)
married x Δ political rights of women					−0.01	(0.704)
married x Δ social rights of women					−0.05	(0.188)
married x Δ divorce ratio					2.84	(0.000)***
married x Δ GDP, ln					0.17	(0.025)*
married x Δ fertility rate					−0.02	(0.803)
Country variables:						
μ specialization			−0.72	(0.023)*	−0.65	(0.042)*
μ political rights of women			0.01	(0.969)	−0.02	(0.914)
μ social rights of women			0.33	(0.001)**	0.34	(0.001)***
μ divorce ratio			−2.94	(0.109)	−2.15	(0.247)
μ GDP, ln			0.43	(0.000)***	0.41	(0.000)***
μ fertility rate			−0.01	(0.807)	0.05	(0.450)
developing countries			0.96	(0.000)***	0.89	(0.000)***
Country interactions with being married:						
married x μ specialization			−0.03	(0.639)	−0.08	(0.309)
married x μ political rights of women					0.05	(0.250)
married x μ social rights of women					−0.02	(0.529)
married x μ divorce ratio					−1.32	(0.003)**
married x μ GDP, ln					0.02	(0.152)
married x μ fertility rate					−0.12	(0.000)***
married x developing countries					0.13	(0.005)**
Varying coefficients:						
Country var(_cons)	0.66		0.09		0.09	
Country-year var(_cons)	0.24		0.21		0.21	
var(Residual)	4.36		4.36		4.35	
rho statistics, country	0.13		0.02		0.02	
rho statistics, country-year	0.05		0.05		0.05	
Summary statistics:						
AIC	664,420		664,309		664,220	
Log-likelihood	−332,182		−332,111		−332,056	
Model's df	24		39		50	
Observations	153,952		153,952		153,952	

* $p < .05$, ** $p < .01$, *** $p < .001$ (exact p-values in parentheses)
Source: WVS-EVS integrated data file 1981-2009

which is consistent with the finding that the life satisfaction of divorcees is lowest in the period soon before and soon after divorce (Clark et al., 2008; Lucas, 2007).

The effects of other individual level variables (omitted from Tables 1 and 2) were consistent with the literature: own unemployment and health problems had strong negative effects on life satisfaction, whereas education and family income had positive effects. The relationship between age and life satisfaction was U-shaped. Moreover, the consequences of unemployment were less negative for married women than for the non-married, the life satisfaction advantage of married women over the non-married was higher at higher levels of family income, the interaction of being a housewife and being married was positive for women, which shows the positive effect of specialization for life satisfaction at individual level.

The effect of the interaction capturing the selection was positive for women, that is, the marriage-related life satisfaction gap was higher when more women of similar socio-demographic characteristics were married. For men, the linear component was also positive but not statistically significant; however, the negative and significant quadratic component for men presents a pattern similar to the one for men.

3.1 The overall trend of marriage-related life satisfaction gap

For men, the marriage-related life satisfaction gap was decreasing over time at rate of -0.11 per 10 years. The coefficient was significant in all three models, and its value was not affected by inclusion of additional variables. For women, the trend was not statistically different from zero in Models 1 and 2, but after including the interactions of the macro level factors with being married (in Model 3), the trend gained significance and took the value of -0.07 per 10 years. This rate of the decline of marriage-related life satisfaction gap was considerable (see Figure 1). Over the observed period the marriage-related life satisfaction gap decreased by more than half: from about 0.5 to about 0.2 for men, and from about 0.4 to about 0.2 for women.

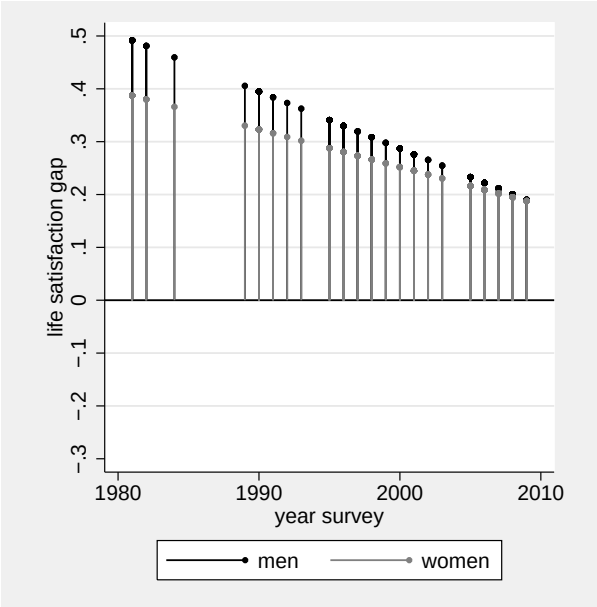


Figure 1: Predicted time trend of marriage-related life satisfaction gap. Preditions are based on from Model 3, Tables 1 and 2.

The trend coefficients were statistically significant in Model 3, which leads to conclusion that the macro factors accounted for in the analysis did not explain the observed trend. For women the contrary took place: the trend turned negative only after including in Model 3 the interactions of being married with macro-level factors. This suggests that the changes of macro factors were overall beneficial for life satisfaction of married women and they compensated for the overall negative trend.

3.2 Decline of specialization and the marriage-related life satisfaction gap

Although the macro factors did not explain the trend of the marriage-related life satisfaction gap, the specialization level could still correlate with the size of the gap. However, in Model 3 neither the

changes of specialization (ΔSpecialization) nor the levels (μSpecialization) were related to the size of marriage-related life satisfaction gap. This result held for both men and women. However, higher level of specialization in a country (μSpecialization) were related to the overall lower life satisfaction of women (for men this effect was statistically significant only in Models 1 and 2).

Figure 2 illustrates the effect size of the MarriedΔSpecialization interaction. The effect is not significant despite the continuous decrease of specialization level in some countries (see the right panel of Figure 2). For example, in case of Ireland, the drop from .2 to -.13 indicates that the percentage of housewives among married women declined by over 30 percentage points, which may be seen as a large social change.

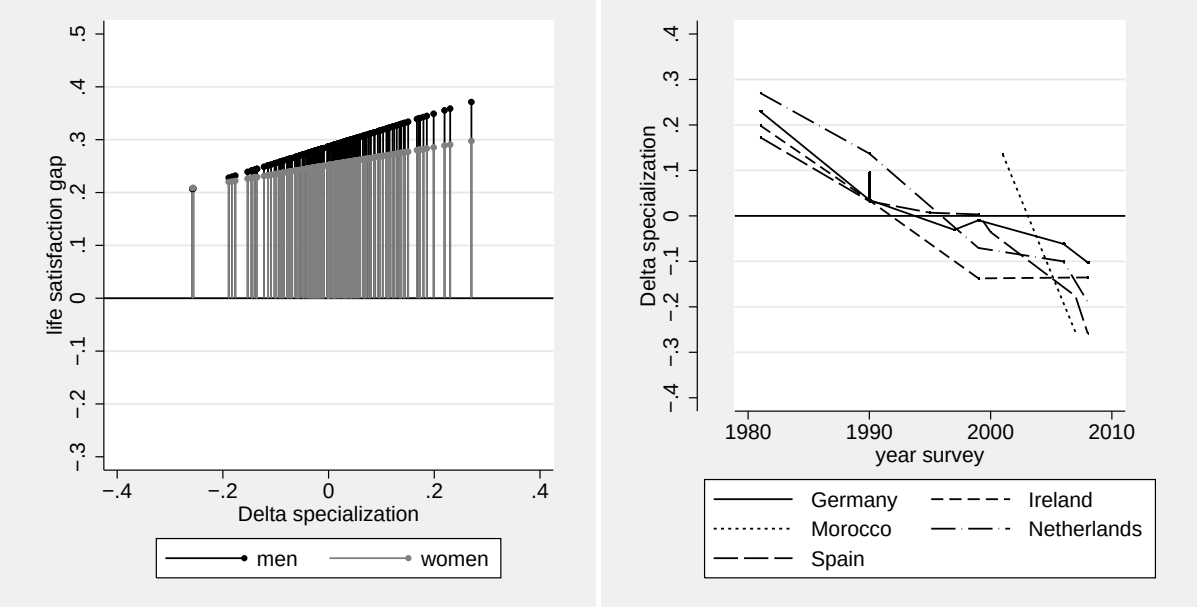


Figure 2: The effect of country-specific changes of specialization (Δ) on the marriage-related life satisfaction gap (left panel) and the changes of specialization in countries where the greatest change (top 10 centiles) has occured over the observed period (right panel).

Summing up, the findings did not support the hypotheses that the changes of economic specialization in marriage shaped the trend of marriage-related life satisfaction gap. They neither can support the weaker hypothesis that the decline of economic specialization within marriage negatively correlated with the marriage-related life satisfaction gap.

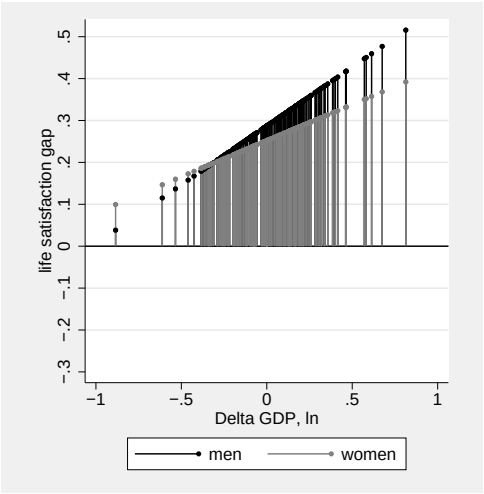
3.3 Other determinants of marriage-related life satisfaction gap

Included primarily as controls, the changes over time of other macro factors had significant effects on the marriage-related life satisfaction gap. In particular, economic growth (ΔGDP) correlated not only with higher life satisfaction overall, but also with higher marriage-related life satisfaction gap (effect size shown in Figure 3(a)). Among women, a significant predictor of the gap was the growth of divorce ratio (Δdivorce ratio, see 3(c)). Growing divorce ratio was also a strong predictor of overall life satisfaction in both genders. Among men, a significant predictor of the gap was also improvement of political right of women.

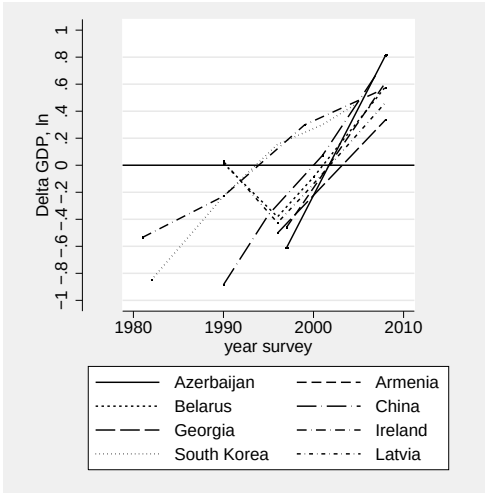
The marriage-related life satisfaction gap correlated also with some cross-country differences. Particularly strong correlates were GDP (μGDP) for men, divorce ratio for women, and fertility rate for both genders. Some of the cross-country differences affected the overall level of life satisfaction; beneficial were in particular higher GDP and stronger protection of social rights of women. As mentioned above, specialization level correlated negatively with the overall life satisfaction of women.

3.4 Robustness checks

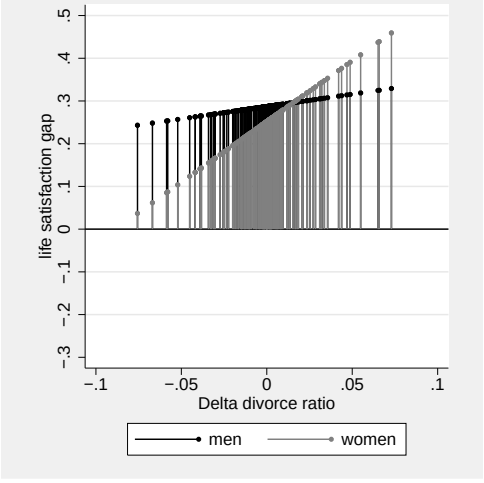
Additional robustness checks were run to ensure the reliability of the results. The results shown in Tables 1 and 2 use the whole sample, which creates the risk that the observed marriage-related life-satisfaction gap was influenced by variation of life satisfaction of divorced and widowed persons. To



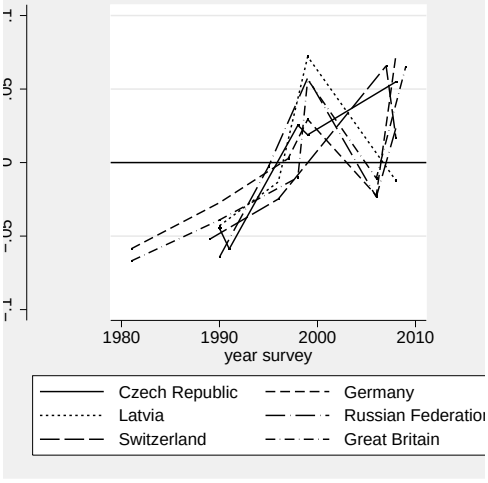
(a) Δ GDP (per capita, ln)



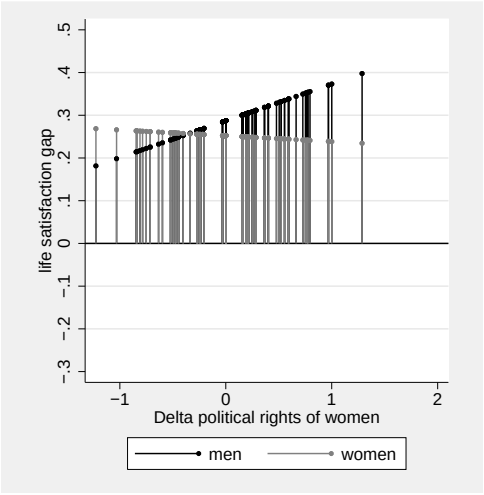
(b) highest change of Δ GDP (per capita, ln) over obs. period



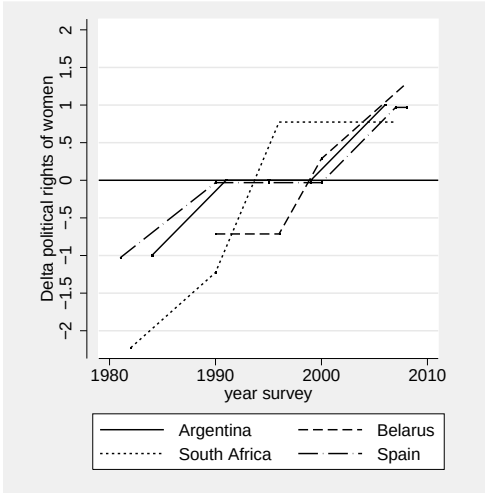
(c) Δ divorce ratio



(d) highest change of Δ divorce ratio over obs. period



(e) Δ political rights of women



(f) highest change of Δ polit. rights of wom. over obs. period

Figure 3: The effects of changes of macro factors (μ) on the marriage-related life satisfaction gap (left panel) and changes of the macro factors in countries where the greatest change (top 10 centiles) has occured over the observed period (right panel).

exclude this possibility I re-estimated the model on a sample consisting of only married and never married persons (see Table 4 in Appendix 2). The results support the conclusions concerning the trend of the marriage-related life-satisfaction gap and the role of economic specialization.

Second, as younger marriages may respond more strongly to the changing social conditions, I re-estimated the model for a sample of persons aged 20-39 (Table 4 in Appendix 2). In this age group the percentages of both married and never married persons in the overall sample was at least 10%. With this limitation of the sample, the estimate of the trend of marriage-related life satisfaction gap lost its statistical significance ($p = .17$ for women and $p = .09$ for men).

Finally, to account for the heterogeneity of the sample, I estimated the results separately for developing and developed countries (Table 5 in Appendix 2). In each group of countries, the trend of marriage-related well-being gap was negative and statistically significant for men, whereas for women it lost the statistical significance. Moreover, in both groups of countries specialization within marriage remained a statistically insignificant predictor of the marriage-related life satisfaction gap.

4 DISCUSSION

The goal of this investigation was to test the hypothesis that the decline of the marriage-related well-being gap was a general trend and not a result specific for the US. The results supported this hypothesis and showed that the rate of decrease was similar for men and women. If this trend remained constant in the future, the marriage-related life satisfaction gap would disappear in about 20-30 years. The trend remained significant after accounting for the decreasing level of economic specialization within married couples. Even more, the negative trend of the marriage-related life satisfaction gap for women became visible only after controlling for interactions of macro factors with being married, which suggests that changes of macro factors compensated for the negative trend for women.

Further, this paper tested if the changes of economic specialization within marriage may explain the observed trend of marriage-related life satisfaction gap. The economic specialization within marriage is one of the broadly accepted explanations of the advantage of marriage over non-married living arrangements. However, the results study did not support the hypothesis that the decrease of economic specialization correlated with smaller marriage-related life satisfaction gap, as the within-country changes over time of economic specialization did not affect the size of the gap neither for men nor for women.

However, the results showed some cross-sectional patterns. Higher level of economic specialization within marriage correlated negatively with the overall life satisfaction of women, whereas for men this effect was statistically insignificant in the final model. This effect was negative and statistically significant for both genders in a sample of developing countries.

Current study points out a list of macro factors which correlate with the marriage-related life satisfaction gap. First, the gap grew together with the growth of GDP, and, among men, was higher in richer countries. This result is consistent with the observation of (Rogers and DeBoer, 2001) that economic hardship negatively affects well-being, in particular of husbands. Higher or growing GDP plausibly liberates people from the need to marry, and cancels the reasons to tolerate bad marriages, however the analysis controls for divorce ratio and selection variables, which suggests that married couples indeed benefit from improving economic conditions more than the unmarried.

Another macro factor that stood out as important, especially for women, is the divorce ratio. Cross-sectionally, in countries with higher divorce ratio the marriage-related life satisfaction gap was smaller (this cross-sectional result is driven mainly by developing countries). On the other hand, growing divorce ratios positively correlated with the marriage-related life satisfaction gap (for women), and with life satisfaction overall (both for men and women). This positive effect of frequent divorce can be explained by easier dissolution of unhappy and abusive marriages. It is also consistent with the finding that introduction of unilateral (no-fault, i.e. in practice easier) divorce in the US brought several improvements for women: 30% decrease of home violence, 8-16% decrease of women's suicide rates, and 10% decrease of number of women killed by their partners (Stevenson and Wolfers, 2006).

To conclude, the study did not provide evidence of the positive effects of higher specialization within marriage on marriage-related life satisfaction gap neither cross-sectionally nor over time. As such, it cannot support the conclusion that policies enhancing more gender-traditional family arrangements may increase life satisfaction of married couples. In the light of the results, policies encouraging homemaker's roles among women are likely to be inefficient tools of improving the condition of marriages.

From a theoretical view point, these results question the thesis that economic specialization within marriage actually builds the gains to marriage. Although the economic specialization within married

couples considerably decreased in several countries, it has not been accompanied by the decreasing marriage related life satisfaction gap. This conclusion is consistent with previous research. A review by Oppenheimer (1997) showed no evidence that growing employment rate of women decreased the probability of marrying; on the contrary, at the individual level women's earnings even increased the chance of women to marry. Another study, by Rogers and DeBoer (2001), showed that not only higher personal income of women increased their subjective well-being and their marital satisfaction, but it also contributed to lowering of the risk of divorce. The authors suggested that the efforts of women to increase their personal incomes may act as strategies to help troubled marriages. Summing up, the results of this and previous studies showed that there is no general negative link between increasing women's employment, and the propensity of people to marry, their marital satisfaction, and the life satisfaction consequences of marriages. In other words, gender-traditional family arrangements which increase the women's chance to assume homemakers' roles seem to bring no inherent gains for marriages. Current study is the first one to establish this result in a broad comparative perspective, and to demonstrate its validity for various groups of countries.

This research pointed out to a different source of life satisfaction gains to marriage than the mechanism of economic specialization within marriage. Specialization theory sees marriage as an arrangement which allows economies of scale and raises the total household productivity over the sum of productivities of the spouses. In other words, marriage is seen as advantageous because it responds to economic necessity. In contrast to this approach, the results of this study suggest that the gains to marriage are higher where the economic necessity is lower. The marriage-related life satisfaction gap grew together with the increase of GDP, divorce ratio (for women), and political rights of women (for men). These relationships suggest that the gains to marriage are higher not in conditions of necessity, but in conditions of free choice. Such conclusion is consistent with some previous literature. Huston and Melz (2004) pointed out that contemporary marriages underwent transformation from being an arrangement that satisfies practical needs, to a field of personal accomplishment and self-fulfillment, which was accompanied by the increasing importance of emotional involvement and romantic love ("individualized marriage", see: Cherlin, 2004).

There are limitations to this research. First, this study could not distinguish between first and subsequent marriages, although they differ in many aspects (Cherlin, 2004). However, Soons et al. (2009) showed that a re-marriage allows a return to the pre-separation levels of life satisfaction, which suggests that the inability to control for this factor does not necessarily create a considerable bias. Similarly, the study also did not control for the duration of marriage. The process of adaptation gradually decreases the initially high life satisfaction gains to marriage (Clark et al., 2008; Soons et al., 2009), therefore the marriage-related life satisfaction gap should be higher in younger marriages. This factor could bias the results if the average duration of marriages differed systematically across countries and correlated with some explanatory factors. This may be the case for the divorce ratios and an additional explanation of the positive correlation of this factor with marriage-related life satisfaction gap.

Finally, the control for selection in this study deserves a comment. The main tool of controlling is a variable measuring the percentage of married people in a age-gender-education group in a given country and year. Although this is not a perfect measure, it is probably the only feasible solution for cross-sectional data. Use of comparative panel data, or data measuring psychological traits of spouses (for this suggestion, see: Huston and Melz, 2004) could solve this problem, they are however not available. This and other issues must be still addressed by future research.

5 APPENDIX 1

Table 3: Pattern of missing data in the WVS-EVS data used in the analysis

	WVS 1981-84	EVS 1981-84	WVS 1989-91	EVS 1990-93	WVS 1994-99	EVS 1999-01	WVS 1999-04	WVS 2004-08	EVS 2008-09
all countries	8	16	18	29	54	33	39	57	47
countries included	1	14	12	21	44	0	32	49	41
all individuals	10307	19378	24558	38213	78678	41125	60047	82992	67786
individuals included	1177	17917	10365	28800	60988	0	47018	68578	57834
% valid	11	92	42	75	78	0	78	83	85
all individuals in countries included	1228	18599	18003	30313	66582	0	49631	71862	60645
% valid in countries included	96	96	58	95	92		95	95	95
% missing - family income	30	16	10	14	15	17	10	9	18
% missing - marital status	2	0	0	0	5	1	0	0	1
% missing - health	0	1	1	0	5	100	0	0	0
% missing - education	2	1	15	3	0	0	1	0	0
% missing - age	0	0	0	0	0	0	0	0	0
% missing - children	0	0	32	1	6	1	2	1	2

Table 3 presents the pattern of missing data, for each wave of the survey separately. The table informs that the relatively large percentage of missing data results mainly from inconsistencies between questionnaires used in particular countries and waves. It is also affected by unavailability of some macro variables in some countries and regions. For example, in the EVS 2008-2009, only 41 out of 47 countries are included in the analysis; the percent of cases included in the analysis is only 85% of the 47 countries, but 95% of the 41 countries. The EVS 1999-2001 is entirely excluded from the study because it misses the question on the health status.

6 APPENDIX 2

Table 4: Multilevel regression of life satisfaction on individual- and country-level predictors. Robustness checks: analysis on a sample limited to married and never married (Models 1 and 2), and on a sample limited to persons aged 20-39 (Models 3 and 4).

	Men (1)	Women (2)	Men (3)	Women (4)
Individual-level variables:				
married	0.29***	0.19***	0.34***	0.33***
o.cohabiting	––	––	0.20***	0.26***
o.widowed	––	––	−0.06	−0.37***
o.divorced	––	––	−0.10	−0.18***
o.separated	––	––	−0.35***	−0.15*
other individual-level controls	yes	yes	yes	yes
Individual-level interactions with being married:				
married x income scale (1-10)	0.00	0.03***	0.02	0.04***
married x housewife	−0.22	0.19***	−0.10	0.16**
married x unemployed	−0.03	0.19***	0.06	0.24***
married x % married in age-sex-edu group	0.08	0.09	−0.00	0.10
married x % married^2 in age-sex-edu group	−0.62**	−0.13	−0.22	−0.09
Country-year variables:				
year (10yrs)	−0.25*	−0.24*	−0.15	−0.23*
Δ specialization	0.09	0.45	0.51	0.59
Δ political rights of women	0.01	0.07	0.03	0.03
Δ social rights of women	0.14	0.20	0.13	0.24*
Δ divorce ratio	6.56**	5.67**	4.27	4.80*
Δ GDP, ln	1.03***	1.12***	1.10***	1.27***
Δ fertility rate	−0.03	−0.05	0.14	0.07
Country-year interactions with being married:				
married x year (10yrs)	−0.11**	−0.11**	−0.08	−0.06
married x Δ specialization	0.13	0.07	0.29	0.19
married x Δ political rights of women	0.05	−0.04	0.06	0.02
married x Δ social rights of women	−0.09*	−0.06	−0.02	−0.05
married x Δ divorce ratio	0.17	1.89	1.96	2.16
married x Δ GDP, ln	0.26**	0.16	0.08	0.01
married x Δ fertility rate	0.08	0.14	−0.12	0.08
Country variables:				
μ specialization	−0.53	−0.46	−0.67	−0.75*
μ political rights of women	−0.09	−0.06	−0.13	−0.06
μ social rights of women	0.47***	0.35***	0.45***	0.35***
μ divorce ratio	−3.64	−1.30	−4.32*	−2.93
μ GDP, ln	0.25***	0.31***	0.30***	0.36***
μ fertility rate	−0.03	0.03	−0.01	0.05
developing countries	0.65***	0.61***	0.65***	0.71***
Country interactions with being married:				
married x μ specialization	−0.13	−0.29**	−0.02	0.01
married x μ political rights of women	−0.00	0.06	0.05	0.08
married x μ social rights of women	−0.06*	−0.02	−0.09*	−0.10*
married x μ divorce ratio	−0.62	−2.06***	0.42	−0.13
married x μ GDP, ln	0.17***	0.14***	0.12***	0.08***
married x μ fertility rate	−0.04*	−0.08***	−0.08***	−0.11***
married x developing countries	0.30***	0.40***	0.20**	0.18**
Varying coefficients:				
Country var(_cons)	0.13	0.09	0.15	0.09
Country-year var(_cons)	0.22	0.21	0.20	0.22
var(Residual)	4.25	4.26	4.25	4.26
rho statistics, country	0.03	0.02	0.03	0.02
rho statistics, country-year	0.05	0.05	0.04	0.05
Summary statistics:				
AIC	518629	510908	265088	293975
Log-likelihood	−259265	−255404	−132490	−146934
Model's df	46	46	50	50
Observations	120856	119002	61708	68390

* $p < .05$, ** $p < .01$, *** $p < .001$
Source: WVS-EVS integrated data file 1981-2009

Table 5: Multilevel regression of life satisfaction on individual- and country-level predictors. Robustness checks: analysis for developing countries (Models 1 and 2), and for developed countries (Models 3 and 4).

	Men (1)	Women (2)	Men (3)	Women (4)
Individual-level variables:				
married	0.54***	0.58***	0.24***	0.28***
cohabiting	0.19***	0.19***	0.16***	0.15***
widowed	0.07	0.13*	−0.25***	−0.13***
divorced	0.13	0.01	−0.20***	−0.22***
separated	−0.36***	−0.02	−0.46***	−0.41***
other individual-level controls	yes	yes	yes	yes
Individual-level interactions with being married:				
married x income scale (1-10)	0.01	0.02*	−0.00	0.03***
married x housewife	−0.25	0.06	−0.03	0.14**
married x unemployed	−0.15*	0.22**	0.13*	0.21***
married x % married in age-sex-edu group	0.10	0.23	0.15	0.11
married x % married^2 in age-sex-edu group	−0.18	0.20	−0.56*	0.17
Country-year variables:				
year (10yrs)	0.30	−0.03	−0.31**	−0.37***
Δ specialization	0.66	0.61	−0.13	0.34
Δ political rights of women	−0.14	−0.18	−0.09	0.02
Δ social rights of women	0.13	0.37	0.09	0.14
Δ divorce ratio	−1.23	−9.24	5.96**	5.33**
Δ GDP, ln	−0.71	−0.59	1.46***	1.60***
Δ fertility rate	0.26	−0.21	−0.19	−0.10
Country-year interactions with being married:				
married x year (10yrs)	−0.13*	−0.09	−0.09*	−0.03
married x Δ specialization	0.15	0.03	0.31	0.28
married x Δ political rights of women	0.10	0.02	0.03	−0.07
married x Δ social rights of women	−0.01	−0.06	−0.08*	−0.06
married x Δ divorce ratio	0.25	5.79	0.48	2.43***
married x Δ GDP, ln	0.45	0.46*	0.29**	0.14
married x Δ fertility rate	0.01	0.15	0.19*	0.01
Country variables:				
μ specialization	−1.23*	−1.19*	0.29	−0.06
μ political rights of women	−0.29	−0.32	0.33	0.33
μ social rights of women	0.47*	0.31	0.37**	0.28**
μ divorce ratio	−16.53*	−15.04**	0.06	1.31
μ GDP, ln	0.47**	0.43**	0.21***	0.36***
μ fertility rate	0.03	0.03	0.40	0.37
o.developing countries	0.00	0.00	0.00	0.00
_				
developing countries				
Country interactions with being married:				
married x μ specialization	−0.05	−0.04	−0.02	−0.01
married x μ political rights of women	0.05	0.15*	−0.07	−0.02
married x μ social rights of women	−0.14**	−0.06	−0.01	0.05
married x μ divorce ratio	2.05	1.66	−0.34	−1.39**
married x μ GDP, ln	0.10**	0.12***	0.14***	−0.01
married x μ fertility rate	−0.07**	−0.07**	−0.09	−0.03
Varying coefficients:				
Country var(_cons)	0.35	0.15	0.06	0.05
Country-year var(_cons)	0.20	0.22	0.14	0.14
var(Residual)	5.20	5.23	3.63	3.82
rho statistics, country	0.06	0.03	0.01	0.01
rho statistics, country-year	0.03	0.04	0.04	0.03
Summary statistics:				
AIC	250807	256918	342194	405136
Log-likelihood	−125352	−128407	−171045	−202516
Model's df	48	48	48	48
Observations	55807	57098	82766	96854

* $p < .05$, ** $p < .01$, *** $p < .001$
Source: WVS-EVS integrated data file 1981-2009

References

Adams, B. N. (2004). Families and family study in international perspective. *Journal of Marriage and Family*, 66(5):1076–1088.

Amato, P. R., Johnson, D. R., Booth, A., and Rogers, S. J. (2003). Continuity and change in marital quality between 1980 and 2000. *Journal of Marriage and Family*, 65(1):1–22.

Becker, G. S. (1981). *A Treatise on the Family*. Number beck81-1 in NBER Books. National Bureau of Economic Research, Inc.

Bryk, A. S. and Raudenbush, S. W. (1992). *Hierarchical Linear Models: Applications and Data Analysis Methods*. Sage Publications, Newbury Park, London, New Dehli.

Cherlin, A. J. (2004). The deinstitutionalization of American marriage. *Journal of Marriage and Family*, 66(4):848–861.

Cingranelli, D. L. and Richards, D. L. (2008). The Cingranelli-Richards human rights dataset version 2008.03.12. dataset.

Clark, A. E., Diener, E., Georgellis, Y., and Lucas, R. E. (2008). Lags and leads in life satisfaction: a test of the baseline hypothesis. *The Economic Journal*, 118(529):F222–F243.

Corra, M., Carter, S. K., Carter, J. S., and Knox, D. (2009). Trends in marital happiness by gender and race, 1973 to 2006. *Journal of Family Issues*, 30(10):1379–1404.

Diener, E., Gohm, C. L., Suh, E., and Oishi, S. (2000). Similarity of the relations between marital status and subjective well-being across cultures. *Journal of Cross-Cultural Psychology*, 31(4):419–436.

Evans, M. D. R. and Kelley, J. (2004). Effect of family structure on life satisfaction: Australian evidence. *Social Indicators Research*, 69(3):303–349.

EVS (2011). European values study 1981-2008, longitudinal data file. Technical report, GESIS Data Archive, Cologne, ZA4804 Data File Version 2.0.0.

Glenn, N. D. (1991). The recent trend in marital success in the United States. *Journal of Marriage and Family*, 53(2):261–270.

Glenn, N. D. and Weaver, C. N. (1988). The changing relationship of marital status to reported happiness. *Journal of Marriage and the Family*, 50:317–324.

Gove, W. R., Hughes, M., and Style, C. B. (1983). Does marriage have positive effects on the psychological well-being of the individual? *Journal of Health and Social Behavior*, 24:122–131.

Gove, W. R., Style, C. B., and Hughes, M. (1990). The effect of marriage on the well-being of adults. A theoretical analysis. *Journal of Family Issues*, 11(1):4–35.

Heston, A., Summers, R., and Aten, B. (2012). Penn World table version 7.1. dataset, Center for International Comparisons of Production, Income and Prices at the University of Pennsylvania.

Huston, T. L. and Melz, H. (2004). The case for (promoting) marriage: The devil is in the details. *Journal of Marriage and Family*, 66(4):943–958.

Kamp Dush, C. M., Taylor, M. G., and Kroeger, R. A. (2008). Marital happiness and psychological well-being across the life course. *Family Relations*, 57(2):211–226.

Lucas, R. E. (2007). Adaptation and the set-point model of subjective well-being. *Current Directions in Psychological Science*, 16(2):75–79.

Lucas, R. E. and Clark, A. E. (2006). Do people really adapt to marriage? *Journal of Happiness Studies*, 7(4):405–426.

Luke, D. A. (2004). *Multilevel Modelling*. Sage University Paper Series on Quantitative Applications in the Social Sciences, 07-143. Sage, Thousand Oaks, CA.

Mancini, A., Bonanno, G., and Clark, A. (2011). Stepping off the hedonic treadmill. *Journal of Individual Differences*, 32(3):144–152.

Mastekaasa, A. (1994). Marital status, distress and well-being: An international comparison. *Journal of Comparative Family Studies*, 25(2):183–205.

Oppenheimer, V. K. (1997). Women's employment and the gain to marriage: The specialization and trading model. *Annual Review of Sociology*, pages 431–453.

Popenoe, D. (1993). American family decline, 1960-1990: A review and appraisal. *Journal of Marriage and the Family*, 55:527–555.

Proulx, C. M., Helms, H. M., and Buehler, C. (2007). Marital quality and personal well-being: A meta-analysis. *Journal of Marriage and Family*, 69(3):576–593.

Rogers, S. J. and Amato, P. R. (2000). Have changes in gender relations affected marital quality? *Social Forces*, 79(2):731–753.

Rogers, S. J. and DeBoer, D. D. (2001). Changes in wives' income: Effects on marital happiness, psychological well-being, and the risk of divorce. *Journal of Marriage and Family*, 63(2):458–472.

Ryan, J., Hughes, M., and Hawdon, J. (1998). Marital status, general-life satisfaction and the welfare state. *International Journal of Comparative Sociology*, 39(3):224–236.

Schultz Lee, K. and Ono, H. (2012). Marriage, cohabitation, and happiness: A cross-national analysis of 27 countries. *Journal of Marriage and Family*, 74(5):953–972.

Snijders, T. A. (2005a). Fixed and random effects. In Everitt, B. and Howell, D., editors, *Encyclopedia of Statistics in Behavioral Science*, volume 2, pages 664–665. Willet.

Snijders, T. A. (2005b). Power and sample size in multilevel modeling. In Everitt, B. and Howell, D., editors, *Encyclopedia of Statistics in Behavioral Science*, volume 3, pages 1570–1573. Wiley.

Soons, J. P. and Kalmijn, M. (2009). Is marriage more than cohabitation? Well-being differences in 30 European countries. *Journal of Marriage and Family*, 71(5):1141–1157.

Soons, J. P., Liefbroer, A. C., and Kalmijn, M. (2009). The long-term consequences of relationship formation for subjective well-being. *Journal of Marriage and Family*, 71(5):1254–1270.

Stack, S. (1998). Marriage, family and loneliness: A cross-national study. *Sociological Perspectives*, 41(2):415–432.

Stack, S. and Eshleman, J. R. (1998). Marital status and happiness: A 17-nation study. *Journal of Marriage and Family*, 60(2):527–536.

Stavrova, O., Fetchenhauer, D., and Schlösser, T. (2012). Cohabitation, gender, and happiness A cross-cultural study in thirty countries. *Journal of Cross-Cultural Psychology*, 43(7):1063–1081.

Stevenson, B. and Wolfers, J. (2006). Bargaining in the shadow of the law: Divorce laws and family distress. *The Quarterly Journal of Economics*, 121(1):267–288.

Stutzer, A. and Frey, B. (2006). Does marriage make people happy, or do happy people get married? *Journal of Socio-economics*, 35(2):326–347.

United Nations (2013). World fertility data 2012. dataset POP/DB/Fert/Rev2012, Department of Economic and Social Affairs, Population Division.

Vanassche, S., Swicegood, G., and Matthijs, K. (2012). Marriage and children as a key to happiness? Cross-national differences in the effects of marital status and children on well-being. *Journal of Happiness Studies*, pages 1–24.

Verbakel, E. (2012). Subjective well-being by partnership status and its dependence on the normative climate. *European Journal of Population/Revue Européenne de Démographie*, 28(2):205–232.

Waite, L. (2000). Trends in men's and women's well-being in marriage. In Waite, L. J., Bachrach, C., Hindin, M., Thomson, E., and Thornton, A., editors, *The Ties that Bind: Perspectives on Marriage and Cohabitation*, pages 368–392. Aldine de Gruyter, New York.

WVS (2009). World Values Survey 1981-2008, official aggregate v.20090901. Technical report, World Values Survey Association (www.worldvaluessurvey.org). Aggregate File Producer: ASEP/JDS, Madrid.

Zimmermann, A. and Easterlin, R. (2006). Happily ever after? Cohabitation, marriage, divorce, and happiness in Germany. *Population and Development Review*, 32(3):511–528.